

접합동소공의 형태계측학적 연구

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Surgical Anatomy of Natural Ostium of the Sphenoid Sinus

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ABSTRACT

Background and Objectives : It is important for surgeons to identify the location of natural ostium of the sphenoid sinus during sphenoidotomy for sphenoiditis and transsphenoidal approach (TSA). But, it is not easy for a beginner to find it. This study aimed to investigate from a clinical aspect the location of natural ostium of the sphenoid sinus using korean adult cadaveric heads. **Material and Methods** : One hundred sagittally-divided adult cadaveric heads were used. After removing the mucosa of anterior wall meticulously, they were carefully examined and documented serially by photography. The items analyzed were the distance from and the degree of nasal sill and limen nasi to the natural ostium of sphenoid sinus, and the distance from the posteroinferior end of the superior turbinate and the skull base to the natural ostium of the sphenoid sinus. In addition, we tried to investigate whether the natural ostium opens into the medial or lateral to the posterior end of the superior turbinate. **Result** : The natural ostium of the sphenoid sinus was located at $34.3 \pm 3.8^\circ$ and 62.7 ± 9.0 mm away from the nasal sill, and at $35.9 \pm 3.8^\circ$ and 56.5 ± 3.2 mm away from the limen nasi. It was located approximately in the middle of the anterior wall of the sphenoid sinus and medially to the posterior end of the superior turbinate in about 83%. **Conclusion** : By identifying the posteroinferior end of the superior turbinate, the location of natural ostium of the sphenoid sinus can be identified. We recommend that surgeons should look for the natural ostium in the middle of the anterior wall of the sphenoid sinus and medial to the posterior end of the superior turbinate. (Korean J Otolaryngol 2001;44:495-8)

KEY WORDS : Sphenoid sinus · Natural ostium · Posterior end of superior turbinate.

(natural ostium of
 sphenoid sinus)
 .
 (skull base)
 (pituitary adenoma)
 (tr -
 anssphenoidal approach)
 가 .
 (mucosele),
 .
 (internal ca -
 rotid artery)
 (trigeminal nerve)
 (cavernous sinus),
 (sphenopalatine artery)
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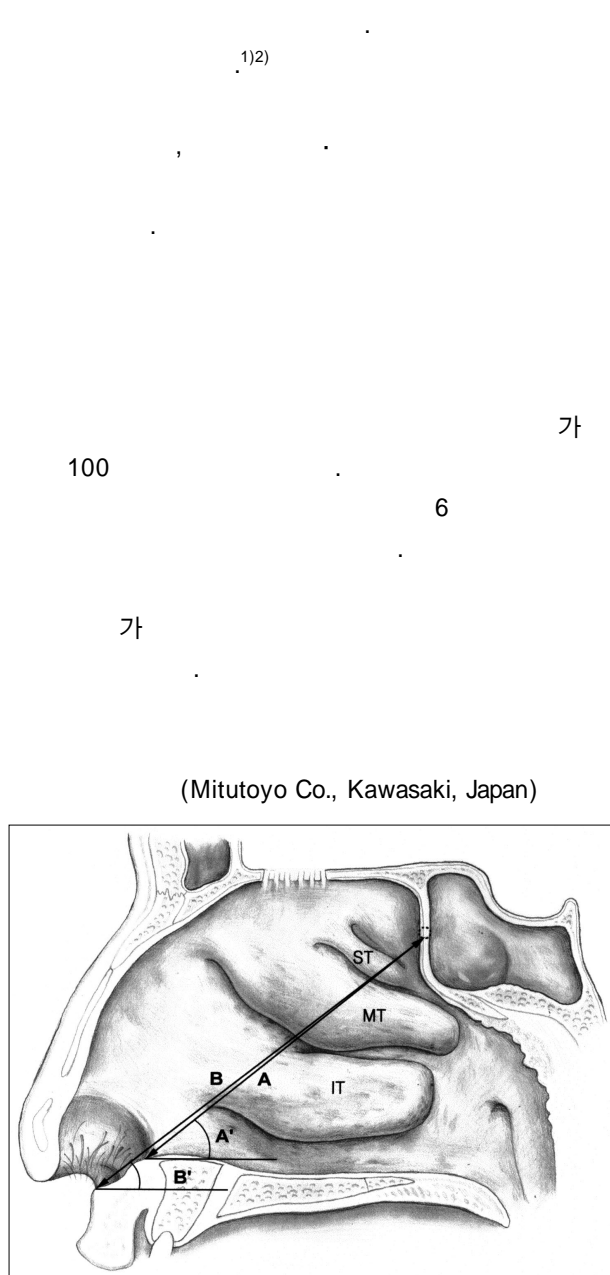


Fig. 1. Lateral nasal wall of the left nose depicting the location of natural ostium of the sphenoid sinus. A and B indicate the distance to natural ostium from limen nasi and sill, respectively. A' and B' indicate the angle between horizontal plane and natural ostium based on limen nasi and sill, respectively. IT : inferior turbinate, MT : middle turbinate, ST : superior turbinate.

Table 1. Location of the natural ostium of sphenoid sinus (I)

Contents	Values
Distance from limen nasi to the natural ostium	56.5 ± 3.2 mm
Distance from sill to the natural ostium	62.7 ± 9.0 mm
Angle between horizontal plane based on limen nasi and the natural ostium	$35.9 \pm 3.8^\circ$
Angle between horizontal plane based on sill and the natural ostium	$34.3 \pm 3.8^\circ$

(limen nasi) (nasal sill)
(hard palate)
(Fig. 1).

(Fig. 1), 가
() 가

가

100

6

가

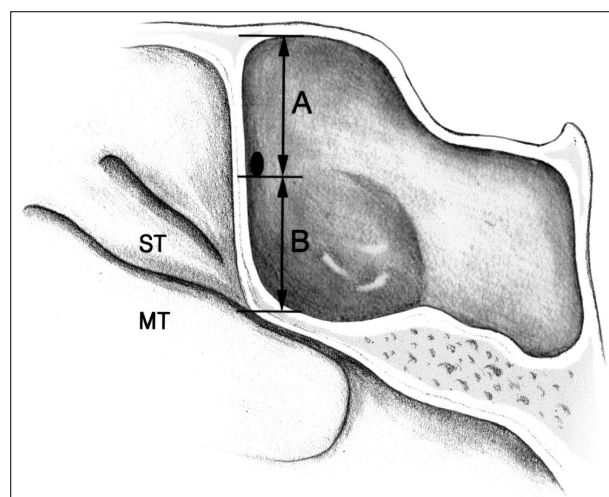


Fig. 2. The location of natural ostium at the anterior wall of the sphenoid sinus. A indicates the distance between skull base to the inferior aspect of natural ostium and B indicates the distance between posteroinferior end of superior turbinate to the inferior aspect of natural ostium. The natural ostium is located approximately at middle of the way up the anterior wall of sphenoid sinus. MT : middle turbinate, ST : superior turbinate.

Table 2. Location of the natural ostium of sphenoid sinus (II)

Contents	Values
Distance between the skull base to the natural ostium	10.3 ± 4.3 mm
Distance between posteroinferior end of the superior turbinate to the natural ostium	10.6 ± 3.0 mm
Opening of the natural ostium regarding to the superior turbinate	
Medial	54/65 (83.1%)
Lateral	11/65 (16.9%)

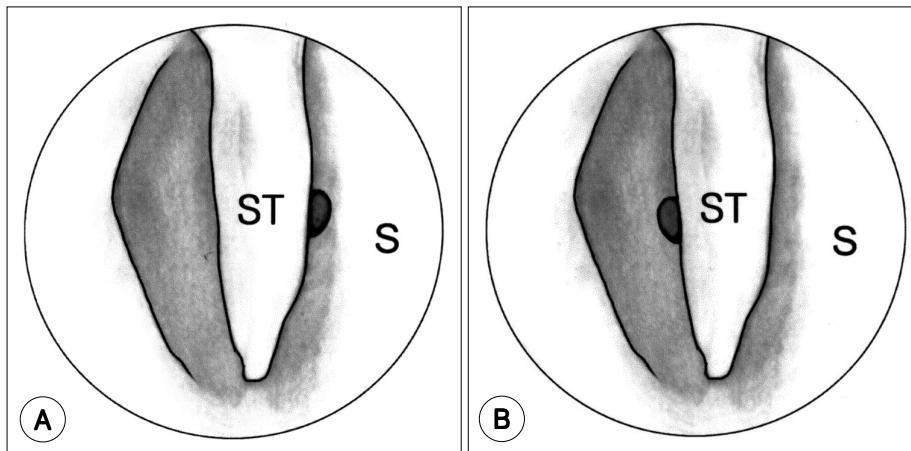


Fig. 3. The drainage site of natural ostium at the anterior wall of the sphenoid sinus. The natural ostium drains medially to posterior end of the superior turbinate in about 83% (Fig. 3A). In 17%, the natural ostium drains laterally to posterior end of the superior turbinate (Fig. 3B). S : nasal septum, ST : superior turbinate.

56.5 ± 3.2 mm
(Table 1, Fig. 1).

3 ± 3.8 °

62.7 ± 9.0 mm
(Table 1, Fig. 1).

34.

가

4 °

6.3 cm Davis ¹⁾

34 ° Davis ¹⁾

7 cm

7 mm

30 °

7

cm

가

10.6 ± 3.0 mm ,

10.3 ± 4.3 mm 가

10 20 mm , ⁴⁾

3 mm, 5 mm, (choana) ⁵⁾

10 12 mm

Levin ⁶⁾

가

가

가

가

(anterior nasal spine)

¹⁾²⁾ Turgut ¹⁾ 가

80 mm , Davis ²⁾

30 ° 7 cm

Lang ³⁾ (subnasale)

62 mm

atine foramen)

가

Lang ³⁾

가 52%

1/3 , 34%

(sph - enopal -

14% 1/3
 1 cm
 1 cm
 stammberger ⁷⁾ (sphen -
 oethmoidal recess) (su -
 preme turbinate)
 가 83% , 17%
 (posterior ethmoid sinus)
 1 cm ,
 bayo -
 net (probe) 가
 (sphenoidal rostrum)

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